

Except for locally dense Eurasian watermilfoil in tributaries of North and South Creeks of the Pamlico River system, *Zannichellia palustris* (horned pondweed) and widgeongrass comprised practically all the SAV biomass in tributaries. Horned pondweed commences growth in winter and tends to be replaced by widgeongrass in May and June. The presence of these species in the littoral of smaller creeks to around the 1-1.2 m depth contour is the rule, especially for the upper and middle reaches. Thus, there tends to be SAV cover on these creeks throughout most of the year.

Occasionally, seagrasses (eelgrass and shoalgrass) and widgeongrass occur in the same areas. The co-existence of the three grasses is unique to North Carolina, and because of the different temporal abundance patterns exhibited (Thayer et al. 1984b), feeding habitat and refuge for fish and shellfish are provided almost year-round by these species.

Initial maps of SAV distribution in Bogue, Back and Core Sound were prepared by Carraway and Priddy (1983). Based on NC Department of Transportation photographs taken in 1981, they estimated a total of 16,901 acres of SAV in their study area. Of the total, 12% was located in western Bogue Sound (from Bogue Inlet to a line running from east of Gales Creek to Rock Point), 13% in Back Sound (east and south of a line from Shackleford Jetty to the north end of Middle Marsh to the southeastern corner of Harkers Island and running along the south shore of that island to Lighthouse Channel), and the remainder in Core Sound (from Lighthouse Channel to a line between Camp Point and Core Banks).

Under funding from the A/P Study, the Beaufort Laboratory of NMFS conducted a visual aerial survey of Core Sound and eastern Albemarle and Pamlico sounds and photographed Core and eastern Pamlico Sound at scales of 1:24,000 and 1:50,000 (Ferguson et al. 1989b). The project also collected seagrass samples in Core, eastern Pamlico, Croatan, Roanoke, Albemarle, and Currituck sounds to provide ground-level verification for aerial photo interpretation of SAV and regional data on SAV species composition. Project personnel also delineated SAV from 1985 photography of southern Core Sound and produced charts of seagrass habitat in Core Sound from Cape Lookout to Drum Inlet.

This project delineated 11,844 acres of SAV with about 12% occurring along the western Core Sound shoreline and 88% along the eastern shore (Figure II-1). SAV was limited to a maximum depth of about 2 meters, probably as a result of light attenuation by turbid water. Widgeongrass was uncommon and occurred most frequently along the western shore (mainland side), whereas shoalgrass was more abundant on the eastern shore. Eelgrass provided most of the plant biomass throughout the sample area but eelgrass and shoalgrass were of almost equal importance on a leaf number basis (Ferguson et al. 1989a).

Ferguson et al. (1989b) observed a number of habitats unrecorded in the 1981 study and noted a larger size for others, particularly in the deeper waters of southern Core Sound. Control of the timing of photography (low tide, and high water and air clarity) and photographic quality increased ability to delineate SAV and probably accounted for the increased SAV acreage estimate.

Figure II-2 shows the approximate location of seagrass habitat based on previous reports, aerial overflights, analyses of the 1985 photography, and preliminary analysis of 1988 photography (Ferguson et al. 1989b). The estimated acreage of marine SAV covered by this area is approximately 200,000 acres from Bogue Inlet to Oregon Inlet including Bogue, Back, Core and southern and eastern Pamlico sounds. About 80% of this total is along the southern and eastern